

Let's Correct: p170-171 1-6all

1. linear, As x increases by 7, y increases by 5.
2. linear, As x increases by 2, y decreases by 4.
3. nonlinear, The graph is not a line.
4. linear, The equation is in slope-intercept form.
5. linear, The equation can be written in slope-intercept form.
6. nonlinear, The equation cannot be written in slope-intercept form.

Chapter 4 Functions

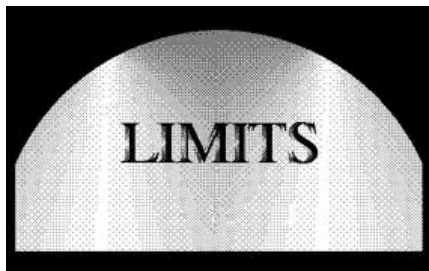
4.4 Comparing Linear & Nonlinear Functions

Unit Question:

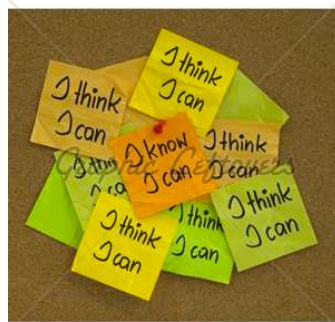
How do we function within the limits we have?

Learner Profile: Communicator

Area of Interaction: Environments



I Can Statement:
I can recognize when a
pattern is linear or
nonlinear.



Think, Pair, Share

Define nonlinear in your own words and give an example of a nonlinear function.

The graph of a linear function shows constant rate of change. A nonlinear function does not have a constant rate of change. So, its graph is not a line.

Does the table represent a linear or nonlinear function?

		+3	+3	+3	
x	3	6	9	12	
y	40	32	24	16	
		-8	-8	-8	

$$y = -\frac{8}{3}x + 48$$

$$\frac{40-32}{3-6} = \frac{-8}{-3}$$

Nonlinear

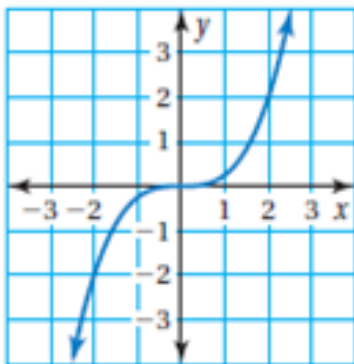
		+2	+2	+2	
x	1	3	5	7	
y	2	11	33	88	
		+9	+22		

$$\frac{11-2}{3-1} \rightarrow \frac{9}{2}$$

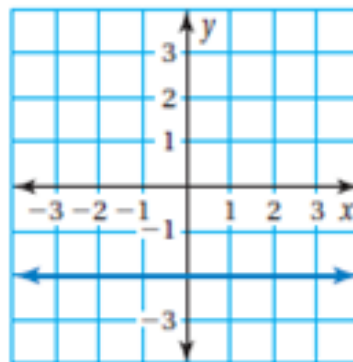
$$\frac{55}{2} \leftarrow \frac{88-33}{7-5}$$

Does the graph represent a *linear* or *nonlinear* function? Explain.

a.



b.



Practice:

Does the table or graph represent a *linear* or *nonlinear* function?
Explain.

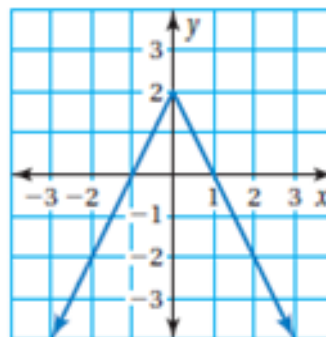
1.

x	y
0	25
7	20
14	15
21	10

2.

x	y
2	8
4	4
6	0
8	-4

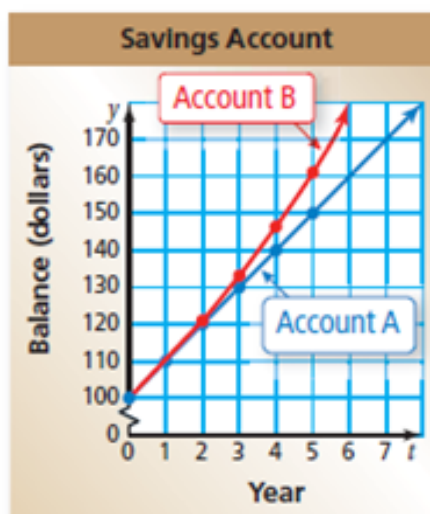
3.



Real-Life Application

Account A earns simple interest. Account B earns compound interest. The table shows the balances for 5 years. Graph the data and compare the graphs.

Year, t	Account A Balance	Account B Balance
0	\$100	\$100
1	\$110	\$110
2	\$120	\$121
3	\$130	\$133.10
4	\$140	\$146.41
5	\$150	\$161.05

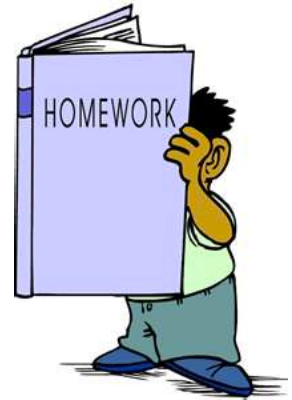


The balance of Account A has a constant rate of change of \$10.
So, the function representing the balance of Account A is linear.

The balance of Account B increases by different amounts each year.
Because the rate of change is not constant, the function representing the balance of Account B is nonlinear.

Assignment:

p. 172-173
#1-19all



Due Monday at the
beginning of class!!